



34506104.ST25.txt  
SEQUENCE LISTING

<110> Niles, Andrew  
Maffitt, Mark  
Haak-Frendscho, Mary

<120> RECOMBINANT PROTEOLYTIC TRYPTASES, ACTIVE SITE MUTANTS THEREOF, AND METHODS OF MAKING SAME

<130> 34506.104

<140> 09/598,982

<141> 2000-06-21

<150> 09/079,970

<151> 1998-04-15

<160> 52

<170> PatentIn version 3.1

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<211> 735

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(735)

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agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
20 25 30

ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
35 40 45

gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
50 55 60

ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
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cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
85 90 95

ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg 336  
Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu

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Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr			
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Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Phe Pro			
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ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca			480
Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala			
145	150	155	160
aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt			528
Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg			
165	170	175	
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Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly			
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gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag			624
Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln			
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Val Pro Lys Lys Pro			
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35 40 45	
Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His	

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Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
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Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
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Val Pro Lys Lys Pro  
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 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

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 ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155  
  
 aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170  
  
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 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190  
  
 agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205  
  
 aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220  
  
 gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235  
  
 gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
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 Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45  
  
 Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60  
  
 Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
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Ile His His Tyr Val Pro Lys Lys Pro  
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 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
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agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc ccg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190

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agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
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gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
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Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
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Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140



34506104.ST25.txt

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
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Ile His His Tyr Val Pro Lys Lys Pro  
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agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
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Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu							
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Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr							
		115		120		125	
ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct							432
Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro							
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ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca							480
Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala							
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aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt							528
Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg							
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gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc cag ggc							576
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gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag							624
Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln							
		195		200		205	
gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct							672
Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro							
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ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat							720
Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr							
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gtc ccc aaa aag ccg							735
Val Pro Lys Lys Pro							
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<210> 11  
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Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
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 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
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 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
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 100 105 110  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
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 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gcc 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala

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caa	ctg	cgg	gag	cag	cac	ctc	tac	tac	cag	gac	cag	ctg	ctg	ccg	gtc	240	
Gln	Leu	Arg	Glu	Gln	His	Leu	Tyr	Tyr	Gln	Asp	Gln	Leu	Leu	Pro	Val		
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agc	agg	atc	atc	gtg	cac	cca	cag	ttc	tac	acc	gcc	cag	atc	gga	gcg	288	
Ser	Arg	Ile	Ile	Val	His	Pro	Gln	Phe	Tyr	Thr	Ala	Gln	Ile	Gly	Ala		
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gac	atc	gcc	ctg	ctg	gag	ctg	gag	gag	ccg	gtg	aag	gtc	tcc	agc	cac	336	
Asp	Ile	Ala	Leu	Leu	Glu	Leu	Glu	Glu	Pro	Val	Lys	Val	Ser	Ser	His		
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gtc	cac	acg	gtc	acc	ctg	ccc	cct	gcc	tca	gag	acc	ttc	ccc	ccg	ggg	384	
Val	His	Thr	Val	Thr	Leu	Pro	Pro	Ala	Ser	Glu	Thr	Phe	Pro	Pro	Gly		
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Leu	Pro	Pro	Pro	Phe	Pro	Leu	Lys	Gln	Val	Lys	Val	Pro	Ile	Met	Glu		
			145					150					155				
aac	cac	att	tgt	gac	gca	aaa	tac	cac	ctt	ggc	gcc	tac	acg	gga	gac	528	
Asn	His	Ile	Cys	Asp	Ala	Lys	Tyr	His	Leu	Gly	Ala	Tyr	Thr	Gly	Asp		
			160					165					170				
gac	gtc	cgc	atc	gtc	cgT	gac	gac	atg	ctg	tgt	gcc	ggg	aac	acc	cgg	576	
Asp	Val	Arg	Ile	Val	Arg	Asp	Asp	Met	Leu	Cys	Ala	Gly	Asn	Thr	Arg		
			175					180					185				190
agg	gac	tca	tgc	cag	ggc	gac	tcc	gga	ggg	ccc	ctg	gtg	tgc	aag	gtg	624	
Arg	Asp	Ser	Cys	Gln	Gly	Asp	Ser	Gly	Gly	Pro	Leu	Val	Cys	Lys	Val		
			195					200					205				
aat	ggc	acc	tgg	ctg	cag	gcg	ggc	gtg	gtc	agc	tgg	ggc	gag	ggc	tgt	672	
Asn	Gly	Thr	Trp	Leu	Gln	Ala	Gly	Val	Val	Ser	Trp	Gly	Glu	Gly	Cys		
			210					215					220				
gcc	cag	ccc	aac	cgg	cct	ggc	atc	tac	acc	cgT	gtc	acc	tac	tac	ttg	720	
Ala	Gln	Pro	Asn	Arg	Pro	Gly	Ile	Tyr	Thr	Arg	Val	Thr	Tyr	Tyr	Leu		
			225					230					235				
gac	tgg	atc	cac	cac	tat	gtc	ccc	aaa	aag	ccg	tgaagcggcc	gccgTcgt				771	
Asp	Trp	Ile	His	His	Tyr	Val	Pro	Lys	Lys	Pro							
			240					245									

<210> 21  
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 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 21

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 22  
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 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
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aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gca atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
 Ala Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155



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aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190

agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

- <210> 23
- <211> 249
- <212> PRT
- <213> Homo sapiens

<400> 23

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 24  
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<220>  
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 Leu Glu Lys Arg Ile Val Gly Gly Gln Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144

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His	Phe	Cys	Gly	Gly	Ser	Leu	Ile	His	Pro	Gln	Trp	Val	Leu	Thr	Ala	
				35					40					45		
gcg	cac	tgc	gtg	gga	ccg	gac	gtc	aag	gat	ctg	gcc	gcc	ctc	agg	gtg	192
Ala	His	Cys	Val	Gly	Pro	Asp	Val	Lys	Asp	Leu	Ala	Ala	Leu	Arg	Val	
			50					55					60			
caa	ctg	cgg	gag	cag	cac	ctc	tac	tac	cag	gac	cag	ctg	ctg	ccg	gtc	240
Gln	Leu	Arg	Glu	Gln	His	Leu	Tyr	Tyr	Gln	Asp	Gln	Leu	Leu	Pro	Val	
		65					70					75				
agc	agg	atc	atc	gtg	cac	cca	cag	ttc	tac	acc	gcc	cag	atc	gga	gcg	288
Ser	Arg	Ile	Ile	Val	His	Pro	Gln	Phe	Tyr	Thr	Ala	Gln	Ile	Gly	Ala	
	80					85				90						
gac	atc	gcc	ctg	ctg	gag	ctg	gag	gag	ccg	gtg	aag	gtc	tcc	agc	cac	336
Asp	Ile	Ala	Leu	Leu	Glu	Leu	Glu	Glu	Pro	Val	Lys	Val	Ser	Ser	His	
	95				100					105					110	
gtc	cac	acg	gtc	acc	ctg	ccc	cct	gcc	tca	gag	acc	ttc	ccc	ccg	ggg	384
Val	His	Thr	Val	Thr	Leu	Pro	Pro	Ala	Ser	Glu	Thr	Phe	Pro	Pro	Gly	
				115				120						125		
atg	ccg	tgc	tgg	gtc	act	ggc	tgg	ggc	gat	gtg	gac	aat	gat	gag	cgc	432
Met	Pro	Cys	Trp	Val	Thr	Gly	Trp	Gly	Asp	Val	Asp	Asn	Asp	Glu	Arg	
			130					135					140			
ctc	cca	ccg	cca	ttt	cct	ctg	aag	cag	gtg	aag	gtc	ccc	ata	atg	gaa	480
Leu	Pro	Pro	Pro	Phe	Pro	Leu	Lys	Gln	Val	Lys	Val	Pro	Ile	Met	Glu	
		145					150					155				
aac	cac	att	tgt	gac	gca	aaa	tac	cac	ctt	ggc	gcc	tac	acg	gga	gac	528
Asn	His	Ile	Cys	Asp	Ala	Lys	Tyr	His	Leu	Gly	Ala	Tyr	Thr	Gly	Asp	
	160					165					170					
gac	gtc	cgc	atc	gtc	cgt	gac	gac	atg	ctg	tgt	gcc	ggg	aac	acc	cgg	576
Asp	Val	Arg	Ile	Val	Arg	Asp	Asp	Met	Leu	Cys	Ala	Gly	Asn	Thr	Arg	
	175				180					185					190	
agg	gac	tca	tgt	caa	ggc	gac	gcc	ggc	gga	cct	ctg	gtg	tgc	aag	gtg	624
Arg	Asp	Ser	Cys	Gln	Gly	Asp	Ala	Gly	Gly	Pro	Leu	Val	Cys	Lys	Val	
				195				200						205		
aat	ggc	acc	tgg	ctg	cag	gcg	ggc	gtg	gtc	agc	tgg	ggc	gag	ggc	tgt	672
Asn	Gly	Thr	Trp	Leu	Gln	Ala	Gly	Val	Val	Ser	Trp	Gly	Glu	Gly	Cys	
			210					215					220			
gcc	cag	ccc	aac	cgg	cct	ggc	atc	tac	acc	cgt	gtc	acc	tac	tac	ttg	720
Ala	Gln	Pro	Asn	Arg	Pro	Gly	Ile	Tyr	Thr	Arg	Val	Thr	Tyr	Tyr	Leu	
		225					230					235				
gac	tgg	atc	cac	cac	tat	gtc	ccc	aaa	aag	ccg	tga	agc	ggcc	gcc	gtc	771
Asp	Trp	Ile	His	His	Tyr	Val	Pro	Lys	Lys	Pro						
	240					245										

<210> 25  
 <211> 249  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 25

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

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Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 26  
 <211> 771  
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 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
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 aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30  
 cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45  
 gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60  
 caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75  
 agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90  
 gac atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
 95 100 105 110  
 gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125  
 atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140  
 ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu

34506104.ST25.txt

145

150

155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190

agg gac tca tgc caa gga gac gcc ggc gga cca ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

<210> 27  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 27

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His

100

105

110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 28  
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 <222> (1)..(735)  
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 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

## 34506104.ST25.txt

ctc atc cac ccc cag tgg gtg ctg acc gcc gcg gcg tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro  
 35 40 45

gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgc cag ggc 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 29  
 <211> 245



&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 29

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro  
 35 40 45  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95  
 Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 30  
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 <212> DNA  
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<220>  
 <221> CDS  
 <222> (1)..(735)  
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<400> 30  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
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 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gca atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140  
 ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480

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Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc cag ggc 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 31  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 31

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
 85 90 95

34506104.ST25.txt

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 32  
 <211> 735  
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<220>  
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<400> 32  
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 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

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ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
35 40 45

gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
50 55 60

ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
65 70 75 80

cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
85 90 95

ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg 336  
Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
100 105 110

ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
115 120 125

ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
130 135 140

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
165 170 175

gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgt caa ggc 576  
Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
180 185 190

gac gcc ggc gga cct ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac ccg cct 672  
Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
225 230 235 240

gtc ccc aaa aag ccg 735  
Val Pro Lys Lys Pro  
245

&lt;210&gt; 33

<211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 33

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro

210

215

220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 34  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (1)..(735)  
 <223>

<400> 34  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
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 1 5 10 15  
 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

## 34506104.ST25.txt

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc caa gga 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac gcc ggc gga cca ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 35  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 35

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95



34506104.ST25.txt

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 36  
 <211> 771  
 <212> DNA  
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<220>  
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 <222> (7)..(753)  
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 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met

15	20	25	30	
cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gcc				144
His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala				
	35	40	45	
gcg gcg tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg				192
Ala Ala Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val				
	50	55	60	
caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc				240
Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val				
	65	70	75	
agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg				288
Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala				
	80	85	90	
gac atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac				336
Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His				
	95	100	105	110
gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg				384
Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly				
	115	120	125	
atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc				432
Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg				
	130	135	140	
ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa				480
Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu				
	145	150	155	
aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac				528
Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp				
	160	165	170	
gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc ccg				576
Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg				
	175	180	185	190
agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg				624
Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val				
	195	200	205	
aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt				672
Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys				
	210	215	220	
gcc cag ccc aac ccg cct ggc atc tac acc cgt gtc acc tac tac ttg				720
Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu				
	225	230	235	
gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt				771
Asp Trp Ile His His Tyr Val Pro Lys Lys Pro				
	240	245		

&lt;210&gt; 37

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 37

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 38  
 <211> 771  
 <212> DNA  
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<220>  
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 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gca atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac 336  
 Ala Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140

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ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190

agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

<210> 39  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 39

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 40  
 <211> 771  
 <212> DNA  
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<220>  
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 <222> (7)..(753)  
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<400> 40  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96

34506104.ST25.txt

Lys 15	Trp	Pro	Trp	Gln	Val 20	Ser	Leu	Arg	Val	His 25	Gly	Pro	Tyr	Trp	Met 30	
cac	ttc	tgc	ggg	ggc	tcc	ctc	atc	cac	ccc	cag	tgg	gtg	ctg	acc	gca	144
His	Phe	Cys	Gly	Gly	Ser	Leu	Ile	His	Pro	Gln	Trp	Val	Leu	Thr	Ala	
			35						40					45		
gcg	cac	tgc	gtg	gga	ccg	gac	gtc	aag	gat	ctg	gcc	gcc	ctc	agg	gtg	192
Ala	His	Cys	Val	Gly	Pro	Asp	Val	Lys	Asp	Leu	Ala	Ala	Leu	Arg	Val	
			50					55					60			
caa	ctg	cgg	gag	cag	cac	ctc	tac	tac	cag	gac	cag	ctg	ctg	ccg	gtc	240
Gln	Leu	Arg	Glu	Gln	His	Leu	Tyr	Tyr	Gln	Asp	Gln	Leu	Leu	Pro	Val	
		65					70					75				
agc	agg	atc	atc	gtg	cac	cca	cag	ttc	tac	acc	gcc	cag	atc	gga	gcg	288
Ser	Arg	Ile	Ile	Val	His	Pro	Gln	Phe	Tyr	Thr	Ala	Gln	Ile	Gly	Ala	
	80					85					90					
gac	atc	gcc	ctg	ctg	gag	ctg	gag	gag	ccg	gtg	aac	gtc	tcc	agc	cac	336
Asp	Ile	Ala	Leu	Leu	Glu	Leu	Glu	Glu	Pro	Val	Asn	Val	Ser	Ser	His	
95					100				105						110	
gtc	cac	acg	gtc	acc	ctg	ccc	cct	gcc	tca	gag	acc	ttc	ccc	ccg	ggg	384
Val	His	Thr	Val	Thr	Leu	Pro	Pro	Ala	Ser	Glu	Thr	Phe	Pro	Pro	Gly	
				115					120					125		
atg	ccg	tgc	tgg	gtc	act	ggc	tgg	ggc	gat	gtg	gac	aat	gat	gag	cgc	432
Met	Pro	Cys	Trp	Val	Thr	Gly	Trp	Gly	Asp	Val	Asp	Asn	Asp	Glu	Arg	
			130					135					140			
ctc	cca	ccg	cca	ttt	cct	ctg	aag	cag	gtg	aag	gtc	ccc	ata	atg	gaa	480
Leu	Pro	Pro	Pro	Phe	Pro	Leu	Lys	Gln	Val	Lys	Val	Pro	Ile	Met	Glu	
		145					150					155				
aac	cac	att	tgt	gac	gca	aaa	tac	cac	ctt	ggc	gcc	tac	acg	gga	gac	528
Asn	His	Ile	Cys	Asp	Ala	Lys	Tyr	His	Leu	Gly	Ala	Tyr	Thr	Gly	Asp	
	160					165					170					
gac	gtc	cgc	atc	gtc	cgt	gac	gac	atg	ctg	tgt	gcc	ggg	aac	acc	ccg	576
Asp	Val	Arg	Ile	Val	Arg	Asp	Asp	Met	Leu	Cys	Ala	Gly	Asn	Thr	Arg	
175					180					185					190	
agg	gac	tca	tgt	caa	ggc	gac	gcc	ggc	gga	cct	ctg	gtg	tgc	aag	gtg	624
Arg	Asp	Ser	Cys	Gln	Gly	Asp	Ala	Gly	Gly	Pro	Leu	Val	Cys	Lys	Val	
				195					200					205		
aat	ggc	acc	tgg	ctg	cag	gcg	ggc	gtg	gtc	agc	tgg	ggc	gag	ggc	tgt	672
Asn	Gly	Thr	Trp	Leu	Gln	Ala	Gly	Val	Val	Ser	Trp	Gly	Glu	Gly	Cys	
			210					215					220			
gcc	cag	ccc	aac	cgg	cct	ggc	atc	tac	acc	cg	gtc	acc	tac	tac	ttg	720
Ala	Gln	Pro	Asn	Arg	Pro	Gly	Ile	Tyr	Thr	Arg	Val	Thr	Tyr	Tyr	Leu	
		225					230					235				
gac	tgg	atc	cac	cac	tat	gtc	ccc	aaa	aag	ccg	tgaagcggcc	gccgctcgt				771
Asp	Trp	Ile	His	His	Tyr	Val	Pro	Lys	Lys	Pro						
	240					245										

<210> 41  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 41

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205



Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 42  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (7)..(753)  
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<400> 42  
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 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg

130

135

140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190

agg gac tca tgc caa gga gac gcc ggc gga cca ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

&lt;210&gt; 43

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 43

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
245

<210> 44  
<211> 735  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(735)  
<223>

<400> 44  
atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtc  
Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
1 5 10 15

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agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc	96
Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser	
20 25 30	
ctc atc cac ccc cag tgg gtg ctg acc gcc gcg gcg tgc gtg gga ccg	144
Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro	
35 40 45	
gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac	192
Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His	
50 55 60	
ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac	240
Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His	
65 70 75 80	
cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag	288
Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu	
85 90 95	
ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg	336
Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu	
100 105 110	
ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act	384
Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr	
115 120 125	
ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct	432
Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro	
130 135 140	
ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca	480
Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala	
145 150 155 160	
aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt	528
Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg	
165 170 175	
gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgc cag ggc	576
Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly	
180 185 190	
gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag	624
Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln	
195 200 205	
gcg gcc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac ccg cct	672
Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro	
210 215 220	
ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat	720
Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr	
225 230 235 240	
gtc ccc aaa aag ccg	735
Val Pro Lys Lys Pro	
245	

&lt;210&gt; 45

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 45

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 46  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 46  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gca atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432

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Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc cag ggc 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 47  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 47

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

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Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 48  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 48  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

48



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agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc	96
Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser	
20 25 30	
ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg	144
Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro	
35 40 45	
gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac	192
Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His	
50 55 60	
ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac	240
Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His	
65 70 75 80	
cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag	288
Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu	
85 90 95	
ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg	336
Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu	
100 105 110	
ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act	384
Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr	
115 120 125	
ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct	432
Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro	
130 135 140	
ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca	480
Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala	
145 150 155 160	
aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt	528
Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg	
165 170 175	
gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgt caa ggc	576
Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly	
180 185 190	
gac gcc ggc gga cct ctg gtg tgc aag gtg aat ggc acc tgg ctg cag	624
Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln	
195 200 205	
gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct	672
Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro	
210 215 220	
ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat	720
Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr	
225 230 235 240	
gtc ccc aaa aag ccg	735
Val Pro Lys Lys Pro	

245

<210> 49  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 49

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln

195

200

205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 50  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 50  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

## 34506104.ST25.txt

ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc caa gga 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac gcc ggc gga cca ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

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 <213> Homo sapiens

<400> 51

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

34506104.ST25.txt

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
225 230 235 240

Val Pro Lys Lys Pro  
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<212> PRT  
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<223> Beta I and Beta II are N at this residue

<220>  
<221> VARIANT  
<222> (23)..(23)

<223> Beta I and Beta II are G at this residue

<220>

<221> VARIANT

<222> (28)..(28)

<223> Beta I and Beta II are R at this residue

<220>

<221> VARIANT

<222> (29)..(29)

<223> Beta I and Beta II are V at this residue

<220>

<221> VARIANT

<222> (51)..(53)

<223> Beta I and Beta II are HGP at these residues

<220>

<221> VARIANT

<222> (76)..(76)

<223> Beta I and Beta II are V at this residue

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<221> VARIANT

<222> (85)..(85)

<223> Beta I and Beta II are A at this residue

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<221> VARIANT

<222> (115)..(116)

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<221> VARIANT

<222> (118)..(118)

<223> Beta I and Beta II are I at this residue

<220>

<221> VARIANT

<222> (132)..(132)

<223> Beta II is K at this residue

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<223> Beta I and Beta II are V at this residue

<220>

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&lt;222&gt; (136)..(136)

&lt;223&gt; Beta I and Beta II are H at this residue

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (141)..(141)

&lt;223&gt; Beta I and Beta II are T at this residue

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (168)..(168)

&lt;223&gt; Beta I and Beta II are R at this residue

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (204)..(204)

&lt;223&gt; Beta I and Beta II are V at this residue

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (215)..(216)

&lt;223&gt; Beta I and Beta II are TR at these residues

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (221)..(221)

&lt;223&gt; Beta I and Beta II are Q at this residue

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (245)..(245)

&lt;223&gt; Beta I and Beta II are G at this residue

&lt;400&gt; 52

Met Leu Ser Leu Leu Leu Leu Ala Leu Pro Val Leu Ala Ser Arg Ala  
 1                    5                    10                    15

Tyr Ala Ala Pro Ala Pro Val Gln Ala Leu Gln Gln Ala Gly Ile Val  
                   20                    25                    30

Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val Ser Leu  
           35                    40                    45

Arg Val Arg Asp Arg Tyr Trp Met His Phe Cys Gly Gly Ser Leu Ile  
   50                    55                    60

His Pro Gln Trp Val Leu Thr Ala Ala His Cys Leu Gly Pro Asp Val

65

70

75

80

Lys Asp Leu Ala Thr Leu Arg Val Gln Leu Arg Glu Gln His Leu Tyr  
85 90 95

Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His Pro Gln  
100 105 110

Phe Tyr Ile Ile Gln Thr Gly Ala Asp Ile Ala Leu Leu Glu Leu Glu  
115 120 125

Glu Pro Val Asn Ile Ser Ser Arg Val His Thr Val Met Leu Pro Pro  
130 135 140

Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr Gly Trp  
145 150 155 160

Gly Asp Val Asp Asn Asp Glu Pro Leu Pro Pro Phe Pro Leu Lys  
165 170 175

Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala Lys Tyr  
180 185 190

His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Ile Arg Asp Asp  
195 200 205

Met Leu Cys Ala Gly Asn Ser Gln Arg Asp Ser Cys Lys Gly Asp Ser  
210 215 220

Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly  
225 230 235 240

Val Val Ser Trp Asp Glu Gly Cys Ala Gln Pro Asn Arg Pro Gly Ile  
245 250 255

Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr Val Pro  
260 265 270

Lys Lys Pro  
275